What is claimed is:

1.   A method for diagnosis of bacterial exacerbations of chronic lung disease in an individual comprising the steps of:

a) obtaining a sputum sample from the individual, wherein the sputum sample comprises lower respiratory tract secretions;

b) determining the level of elastase in the sputum sample; and

c) comparing the level of elastase in the sputum sample to a reference standard, wherein an increase in the elastase level over the reference standard is indicative of bacterial induced exacerbations of chronic lung disease.

2.   The method of claim 1, wherein the elastase level is determined by contacting the sputum sample with a chromogenic substrate of elastase.

3.   The method of claim 2, wherein the chromogenic substrate for elastase activity is N-methoxysuccinyl-ala-ala-pro-val p-nitroanilide.

4.   The method of claim 1, wherein the bacterial exacerbation is induced by bacteria selected from the group consisting of H. influenzae, M. catarrhalis, P. aeruginosa and S. pneumoniae.

5.   The method of claim 4, wherein the bacteria is H. influenzae.

6.   The method of claim 4, wherein the bacteria is M. catarrhalis.

7.   The method of claim 4, wherein the bacteria is S. pneumoniae.

8. The method of claim 4, wherein the bacteria is P. aeruginosa.

9. The method of claim 1, wherein the chronic lung disease is chronic bronchitis.

10. The method of claim 1, wherein the sputum sample is processed to remove cellular components prior to determination of elastase levels.

11. A method for diagnosis of bacterial exacerbations of chronic lung disease in an individual comprising the steps of:

a) obtaining a sputum sample from the individual, wherein the sputum sample comprises lower respiratory tract secretions; and

b) determining the presence or absence of elastase in the sputum sample by contacting the sample with an absorbent carrier coated with a chromogenic substrate therefor, wherein a change in color of the absorbent carrier is indicative of bacterial induced exacerbations of chronic lung disease.

12. The method of claim 11, wherein the chromogenic substrate for elastase activity is N-methoxysuccinyl-ala-ala-pro-val p-nitroanilide.

13. The method of claim 11, wherein the bacterial exacerbation is induced by bacteria selected from the group consisting of H. influenzae, M. catarrhalis, P. aeruginosa and S. pneumoniae.

14. The method of claim 13, wherein the bacteria is H. influenzae.

15. The method of claim 13, wherein the bacteria is M. catarrhalis.

16.   The method of claim 13, wherein the bacteria is
P. aeruginosa.

17.   The method of claim 13, wherein the bacteria is
S. pneumonia.

18.   The method of claim 11, wherein the sputum
sample is processed to remove cellular components prior to
determination of presence or absence of elastase.

19.   A method for diagnosis of H. influenzae induced
exacerbations of chronic lung disease in an individual
comprising the steps of:
        a) obtaining a sputum sample from the
individual, wherein the sputum sample comprises lower
respiratory tract secretions;
        b) determining the level of IL-8 in the sputum
sample; and
        c) comparing the level of IL-8 in the sputum to
a reference standard, wherein an increase in the IL-8 over
reference standard is indicative of H. influenzae induced
exacerbations of chronic lung disease.

20.   A method for diagnosis of H. influenzae or M.
catarrhalis induced exacerbations of chronic lung disease
in an individual comprising the steps of:
        a) obtaining a sputum sample from the
individual, wherein the sputum sample comprises lower
respiratory tract secretions;
        b) determining the level of TNF-α in the sputum
sample; and
        c) comparing the level of TNF-α in the sputum to
a reference standard, wherein an increase in the TNF-α
over the reference standard is indicative of H. influenzae
or M. catarrhalis induced exacerbations of chronic lung
disease.